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MARXISM AND DARWINISM

By ANTON PANNEKOEK

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Marxism and Darwinism

BY

ANTON PANNEKOEK

Translated by Nathan Weiser.

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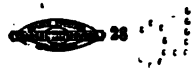

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MARXISM *and* DARWINISM

I. DARWINISM.

Two scientists can hardly be named who have, in the second half of the 19th century, dominated the human mind to a greater degree than Darwin and Marx. Their teachings revolutionized the conception that the great masses had about the world. For decades their names have been on the tongues of everybody, and their teachings have become the central point of the mental struggles which accompany the social struggles of today. The cause of this lies primarily in the highly scientific contents of their teachings.

The scientific importance of Marxism as well as of Darwinism consists in their following out the theory of evolution, the one upon the domain of the organic world, of things animate; the other, upon the domain of society. This theory of evolution, however, was in no way new, it had its advocates before Darwin and Marx; the philosopher, Hegel, made it even as the central point of his philosophy. It is, therefore, necessary to observe closely what were the achievements of Darwin and Marx in this domain.

The theory that plants and animals have developed one from another is met with first in the nineteenth century. Formerly the question, "Whence come all these thousands and hundreds of thousands of different kinds of plants and animals that we

know?" was answered. "At the time of creation God created them all, each after its kind." This primitive theory was in conformity with the experiences had and with the oldest information that could be got. According to the information, all known plants and animals have always been the same. Scientifically, this experience was thus expressed, "All kinds are invariable because the parents transmit their characteristics to their children."

There were, however, some peculiarities among plants and animals which gradually forced a different conception to be entertained. They so nicely let themselves be arranged into a system which was first set up by the Swedish scientist Linnaeus. According to this system, the animals are divided into main divisions; these divisions are divided into classes, classes into orders, orders into families, families into species, each of which contain a few kinds. The more semblance there is in their characteristics, the nearer they stand towards each other in this system, and the smaller is the group to which they belong. All the animals classed as mammalian show the same general characteristics in their bodily frame. The herbivorous animals, and carnivorous animals, and monkeys, each of which belongs to a different order, are again differentiated. Bears, dogs, and cats, all of which are rapacious animals, have much more in common in bodily form than they have with horses or monkeys. This conformity is still more obvious when we examine varieties of the same species; the cat, tiger and lion resemble each other in many respects where they differ from dogs and bears. If we turn from the class of mammals to other classes, such as birds or fishes, we find greater differences than we find in the other class.

There is still, however, a slight resemblance in the formation of the body, the skeleton and the nervous system are still there. These features first disappear when we turn from this main division, which embraces all the vertebrates, and go to the molluscs (soft bodied animals) or to the polyps.

The entire animal world may thus be arranged into divisions and subdivisions. Had every different kind of animal been created entirely independent of all the others, there would be no reason why such orders should exist. There would be no reason why there should not be mammals having six paws. We would have to assume, then, that at the time of creation, God had taken Linnaeus' system as a plan and created everything according to this plan. Happily we have another way of accounting for it. The likeness in the construction of the body may be due to a real family relationship. According to this conception, the conformity of peculiarities show how near or remote the relationship is; just as the resemblance of brothers and sisters is greater than between remote relatives. The animal classes were, therefore, not created individually, but descended one from another. They form one trunk that started with simple foundations and which has continually developed; the last and thin twigs are our present existing kinds. All species of cats descend from a primitive cat, which together with the primitive dog and the primitive bear, is the descendant of some primitive type of rapacious animal. The primitive rapacious animal, the primitive hoofed animal and the primitive monkey have descended from some primitive mammal, etc.

This theory of descent was advocated by Lamarck and by Geoffrey St. Hilaire. It did not, however, meet

with general approval. These naturalists could not prove the correctness of this theory and, therefore, it remained only a hypothesis, a mere assumption. When Darwin came, however, with his main book, The Origin of Species, it struck like a thunderbolt; his theory of evolution was immediately accepted as a strongly proved truth. Since then the theory of evolution has become inseparable from Darwin's name. Why so?

This was partly due to the fact that through experience ever more material was accumulated which went to support this theory. Animals were found which could not very well be placed into the classification such as oviparous mammals (that is, animals which lay eggs and nourish their offspring from their breast.—Translator) fishes having lungs, and invertebrate animals. The theory of descent claimed that these are simply the remnants of the transition between the main groups. Excavations have revealed fossil remains which looked different from animals living now. These remains have partly proved to be the primitive forms of our animals, and that the primitive animals have gradually developed to existing ones. Then the theory of cells was formed; every plant, every animal, consists of millions of cells and has been developed by incessant division and differentiation of single cells. Having gone so far, the thought that the highest organisms have descended from primitive beings having but a single cell, could not appear as strange.

All these new experiences could not, however, raise the theory to a strongly proved truth. The best proof for the correctness of this theory would have been to have an actual transformation from one animal

kind to another take place before our eyes, so that we could observe it. But this is impossible. How then is it at all possible to prove that animal forms are really changing into new forms? This can be done by showing the cause, the propelling force of such development. This Darwin did. Darwin discovered the mechanism of animal development, and in doing so he showed that under certain conditions some animal-kinds will necessarily develop into other animal-kinds. We will now make clear this mechanism.

Its main foundation is the nature of transmission, the fact that parents transmit their peculiarities to children, but that at the same time the children diverge from their parents in some respects and also differ from each other. It is for this reason that animals of the same kind are not all alike, but differ in all directions from the average type. Without this so-called variation it would be wholly impossible for one animal species to develop into another. All that is necessary for the formation of a new species is that the divergence from the central type become greater and that it goes on in the same direction until this divergence has become so great that the new animal no longer resembles the one from which it descended. But where is that force that could call forth the ever growing variation in the same direction?

Lamarck declared that this was owing to the usage and much exercise of certain organs; that, owing to the continuous exercise of certain organs, these become ever more perfected. Just as the muscles of men's legs get strong from running much, in the same way the lion acquired its powerful paws and the hare its speedy legs. In the same way the giraffes got their long necks because in order to reach the tree leaves,

which they ate, their necks were stretched so that a short-necked animal developed to the long-necked giraffe. To many this explanation was incredible and it could not account for the fact that the frog should have such a green color which served him as a good protecting color.

To solve the same question, Darwin turned to another line of experience. The animal breeder and the gardener are able to raise artificially new races and varieties. When a gardener wants to raise from a certain plant a variety having large blossoms, all he has to do is to kill before maturity all those plants having small blossoms and preserve those having large ones. If he repeats this for a few years in succession, the blossoms will be ever larger, because each new generation resembles its predecessor, and our gardener, having always picked out the largest of the large for the purpose of propagation, succeeds in raising a plant with very large blossoms. Through such action, done sometimes deliberately and sometimes accidentally, people have raised a great number of races of our domesticated animals which differ from their original form much more than the wild kinds differ from each other.

If we should ask an animal-breeder to raise a long-necked animal from a short-necked one, it would not appear to him an impossibility. All he would have to do would be to choose those having partly longer necks, have them inter-bred, kill the young ones having narrow necks and again have the long-necked inter-breed. If he repeated this at every new generation the result would be that the neck would ever become longer and we would get an animal resembling the giraffe.

This result is achieved because there is a definite will with a definite object, which, to raise a certain variety, chooses certain animals. In nature there is no such will, and all the deviations must again be straightened out by interbreeding, so that it is impossible for an animal to keep on departing from the original stock and keep going in the same direction until it becomes an entirely different species. Where, then, is that power in nature that chooses the animals just as the breeder does?

Darwin pondered this problem long before he found its solution in the "struggle for existence." In this theory we have a reflex of the productive system of the time in which Darwin lived; because it was the capitalist competitive struggle which served him as a picture for the struggle for existence prevailing in nature. It was not through his own observation that this solution presented itself to him. It came to him by his reading the works of the economist Malthus. Malthus tried to explain that in our bourgeois world there is so much misery and starvation and privation because population increases much more rapidly than the existing means of subsistence. There is not enough food for all; people must, therefore, struggle with each other for their existence, and many must go down in this struggle. By this theory capitalist competition as well as the misery existing were declared as an unavoidable natural law. In his autobiography Darwin declares that it was Malthus' book which made him think about the struggle for existence.

"In October, 1838, that is, fifteen months after I had begun my systematic inquiry, I happened to read for amusement Malthus on population, and being well prepared to appreciate the struggle for existence which

everywhere goes on from long continuous observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved, and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work."

It is a fact that the increase in the birth of animals is greater than the existing food permits of sustaining. There is no exception to the rule that all organic beings tend to increase so rapidly that our earth would be overrun very soon by the offspring of a single pair, were these not destroyed. It is for this reason that a struggle for existence must arise. Every animal tries to live, does its best to eat, and seeks to avoid being eaten by others. With its particular peculiarities and weapons it struggles against the entire antagonistic world, against animals, cold, heat, dryness, inundations, and other natural occurrences that may threaten to destroy it. Above all, it struggles with the animals of its own kind, who live in the same way, have the same peculiarities, use the same weapons and live by the same nourishment. This struggle is not a direct one; the hare does not struggle directly with the hare, nor the lion with the lion—unless it is a struggle for the female—but it is a struggle for existence, a race, a competitive struggle. All of them can not reach a grown-up age; most of them are destroyed, and only those who win the race remain. But which are the ones to win in the race? Those which, through their peculiarities, through their bodily structures are best able to find food or to escape an enemy; in other words, those which are best adapted to existing conditions will survive. "Because there

are ever more individuals born than can remain alive, the struggle as to which shall remain alive must start again and that creature that has some advantage over the others will survive, but as these diverging peculiarities are transmitted to the new generations, nature itself does the choosing, and a new generation will arise having changed peculiarities."

Here we have another application for the origin of the giraffe. When grass does not grow in some places, the animals must nourish themselves on tree leaves, and all those whose necks are too short to reach these leaves must perish. In nature itself there is selection, and nature selects only those having long necks. In conformity with the selection done by the animal breeder, Darwin called this process "natural selection."

This process must necessarily produce new species. Because too many are born of a certain species, more than the existing food supply can sustain, they are forever trying to spread over a larger area. In order to procure their food, those living in the woods go to the plain, those living on the soil go into the water, and those living on the ground climb on trees. Under these new conditions divergence is necessary. These divergencies are increased, and from the old species a new one develops. This continuous movement of existing species branching out into new relations results in these thousands of different animals changing still more.

While the Darwinian theory explains thus the general descent of the animals, their transmutation and formation out of primitive beings, it explains, at the same time, the wonderful conformity throughout nature. Formerly this wonderful conformity could

only be explained through the wise superintending care of God. Now, however, this natural descent is clearly understood. For this conformity is nothing else than the adaptation to the means of life. Every animal and every plant is exactly adapted to existing circumstances, for all those whose build is less conformable are less adapted and are exterminated in the struggle for existence. The green-frog, having descended from the brown-frog, must preserve its protecting color, for all those that deviate from this color are sooner found by the enemies and destroyed or find greater difficulty in obtaining their food and must perish.

It was thus that Darwin showed us, for the first time, that new species continually formed out of old ones. The theory of descent, which until then was merely a presumptive inference of many phenomena that could not be explained well in any other way, gained the certainty of an absolute inference of definite forces that could be proved. In this lies the main reason that this theory had so quickly dominated the scientific discussions and public attention.

II. MARXISM.

If we turn to Marxism we immediately see a great conformity with Darwinism. As with Darwin, the scientific importance of Marx's work consists in this, that he discovered the propelling force, the cause of social development. He did not have to prove that such a development was taking place; every one knew that from the most primitive times new social forms

ever supplanted older, but the causes and aims of this development were unknown.

In his theory Marx started with the information at hand in his time. The great political revolution that gave Europe the aspect it had, the French Revolution, was known to everyone to have been a struggle for supremacy, waged by the bourgeois against nobility and royalty. After this struggle new class struggles originated. The struggle carried on in England by the manufacturing capitalists against the landowners dominated politics; at the same time the working class revolted against the bourgeoisie. What were all these classes? Wherein did they differ from each other? Marx proved that these class distinctions were owing to the various functions each one played in the productive process. It is in the productive process that classes have their origin, and it is this process which determines to what class one belongs. Production is nothing else than the social labor process by which men obtain their means of subsistence from nature. It is the production of the material necessities of life that forms the main structure of society and that determines the political relations and social struggles.

The methods of production have continuously changed with the progress of time. Whence came these changes? The manner of labor and the productive relationship depend upon the tools with which people work, upon the development of technique and upon the means of production in general. Because in the Middle Ages people worked with crude tools, while now they work on gigantic machinery, we had at that time small trade and feudalism, while now we have capitalism; it is also for this reason that at that time the feudal nobility and the small bourgeoisie were the

most important classes, while now it is the bourgeoisie and the proletarians which are the classes.

It is the development of tools, of these technical aids which men direct, which is the main cause, the propelling force of all social development. It is self-understood that the people are ever trying to improve these tools so that their labor be easier and more productive, and the practice they acquire in using these tools, leads their thoughts upon further improvements. Owing to this development, a slow or quick progress of technique takes place, which at the same time changes the social forms of labor. This leads to new class relations, new social institutions and new classes. At the same time social, i. e., political struggles arise. Those classes predominating under the old process of production try to preserve artificially their institutions, while the rising classes try to promote the new process of production; and by waging the class struggles against the ruling class and by conquering them they pave the way for the further unhindered development of technique.

Thus the Marxian theory disclosed the propelling force and the mechanism of social development. In doing this it has proved that history is not something irregular, and that the various social systems are not the result of chance or haphazard events, but that there is a regular development in a definite direction. In doing this it was also proved that social development does not cease with our system, because technique continually develops.

Thus, both teachings, the teachings of Darwin and of Marx, the one in the domain of the organic world and the other upon the field of human society, raised the theory of evolution to a positive science.

In doing this they made the theory of evolution acceptable to the masses as the basic conception of social and biological development.

III. MARXISM AND THE CLASS STRUGGLE.

While it is true that for a certain theory to have a lasting influence on the human mind it must have a highly scientific value, yet this in itself is not enough. It quite often happened that a scientific theory was of utmost importance to science, nevertheless, with the probable exception of a few learned men, it evoked no interest whatsoever. Such, for instance, was Newton's theory of gravitation. This theory is the foundation of astronomy, and it is owing to this theory that we have our knowledge of heavenly bodies, and can foretell the arrival of certain planets and eclipses. Yet, when Newton's theory of gravitation made its appearance, a few English scientists were its only adherents. The broad mass paid no attention to this theory. It first became known to the mass by a popular book of Voltaire's written a half century afterwards.

There is nothing surprising about this. Science has become a specialty for a certain group of learned men, and its progress concerns these men only, just as smelting is the smith's specialty, and an improvement in the smelting of iron concerns him only. Only that which all people can make use of and which is found by everyone to be a life necessity can gain adherents among the large mass. When, therefore, we see that a certain scientific theory stirs up zeal and passion in the large mass, this can be attributed to

the fact that this theory serves them as a weapon in the class struggle. For it is the class struggle that engages almost all the people.

This can be seen most clearly in Marxism. Were the Marxian economic teachings of no importance in the modern class struggle, then none but a few professional economists would spend their time on them. It is, however, owing to the fact that Marxism serves the proletarians as a weapon in the struggle against capitalism that the scientific struggles are centered on this theory. It is owing to this service that Marx's name is honored by millions who know even very little of his teaching, and is despised by thousands that understand nothing of his theory. It is owing to the great role the Marxian theory plays in the class struggle that his theory is diligently studied by the large mass and that it dominates the human mind.

The proletarian class struggle existed before Marx for it is the offspring of capitalist exploitation. It was nothing more than natural that the workers, being exploited, should think about and demand another system of society where exploitation would be abolished. But all they could do was to hope and dream about it. They were not sure of its coming to pass. Marx gave to the labor movement and Socialism a theoretical foundation. His social theory showed that social systems were in a continuous flow wherein capitalism was only a temporary form. His studies of capitalism showed that owing to the continuous development of perfection of technique, capitalism must necessarily develop to Socialism. This new system of production can only be established by the proletarians struggling against the capitalists, whose interest it is to maintain the old system of production. So-

cialism is therefore the fruit and aim of the proletarian class struggle.

Thanks to Marx, the proletarian class struggle took on an entirely different form. Marxism became a weapon in the proletarian hands; in place of vague hopes he gave a positive aim, and in teaching a clear recognition of the social development he gave strength to the proletarian and at the same time he created the foundation for the correct tactics to be pursued. It is from Marxism that the workingmen can prove the transitoriness of capitalism and the necessity and certainty of their victory. At the same time Marxism has done away with the old utopian views that Socialism would be brought about by the intelligence and good will of some judicious men; as if Socialism were a demand for justice and morality; as if the object were to establish an infallible and perfect society. Justice and morality change with the productive system, and every class has different conceptions of them. Socialism can only be gained by the class whose interest lies in Socialism, and it is not a question about a perfect social system, but a change in the methods of production leading to a higher step, i. e., to social production.

Because the Marxian theory of social development is indispensable to the proletarians in their struggle, they, the proletarians, try to make it a part of their inner self; it dominates their thoughts, their feelings, their entire conception of the world. Because Marxism is the theory of social development, in the midst of which we stand, therefore Marxism itself stands as the central point of the great mental struggles that accompany our economic revolution.

IV. DARWINISM AND THE CLASS STRUGGLE.

That Marxism owes its importance and position only to the role it takes in the proletarian class struggle, is known to all. With Darwinism, however, things seem different to the superficial observer, for Darwinism deals with a new scientific truth which has to contend with religious prejudices and ignorance. Yet it is not hard to see that in reality Darwinism had to undergo the same experiences as Marxism. Darwinism is not a mere abstract theory which was adopted by the scientific world after discussing and testing it in a mere objective manner. No, immediately after Darwinism made its appearance, it had its enthusiastic advocates and passionate opponents; Darwin's name, too, was either highly honored by people who understood something of his theory, or despised by people who knew nothing more of his theory than that "man descended from the monkey," and who were surely unqualified to judge from a scientific standpoint the correctness or falsity of Darwin's theory. Darwinism, too, played a role in the class-struggle, and it is owing to this role that it spread so rapidly and had enthusiastic advocates and venomous opponents.

Darwinism served as a tool to the bourgeoisie in their struggle against the feudal class, against the nobility, clergy-rights and feudal lords. This was an entirely different struggle from the struggle now waged by the proletarians. The bourgeoisie was not an exploited class striving to abolish exploitation. Oh no. What the bourgeoisie wanted was to get rid of the old ruling powers standing in their way. The bourgeoisie themselves wanted to rule, basing their demands upon the fact that they were the most impor-

tant class, the leaders of industry. What argument could the old class, the class that became nothing but useless parasites, bring forth against them? They leaned on tradition, on their ancient divine rights. These were their pillars. With the aid of religion the priests held the great mass in subjection and ready to oppose the demands of the bourgeoisie.

It was therefore for their own interests that the bourgeoisie were in duty bound to undermine the "divinity" right of rulers. Natural science became a weapon in the opposition to belief and tradition; science and the newly discovered natural laws were put forward; it was with these weapons that the bourgeoisie fought. If the new discoveries could prove that what the priests were teaching was false, the "divine" authority of these priests would crumble and the "divine rights" enjoyed by the feudal class would be destroyed. Of course the feudal class was not conquered by this only, as material power can only be overthrown by material power, but mental weapons become material tools. It is for this reason that the bourgeoisie relied so much upon material science.

Darwinism came at the desired time; Darwin's theory that man is the descendant of a lower animal destroyed the entire foundation of Christian dogma. It is for this reason that as soon as Darwinism made its appearance, the bourgeoisie grasped it with great zeal.

This was not the case in England. Here we again see how important the class struggle was for the spreading of Darwin's theory. In England the bourgeoisie had already ruled a few centuries, and as a mass they had no interest to attack or destroy religion. It is for this reason that although this theory was

widely read in England, it did not stir anybody; it merely remained a scientific theory without great practical importance. Darwin himself considered it as such, and for fear that his theory might shock the religious prejudices prevailing, he purposely avoided applying it immediately to men. It was only after numerous postponements and after others had done it before him, that he decided to make this step. In a letter to Haeckel he deplored the fact that his theory must hit upon so many prejudices and so much indifference that he did not expect to live long enough to see it break through these obstacles.

But in Germany things were entirely different, and Haeckel correctly answered Darwin that in Germany the Darwinian theory met with an enthusiastic reception. It so happened that when Darwin's theory made its appearance, the bourgeoisie was preparing to carry on a new attack on absolutism and junkerism. The liberal bourgeoisie was headed by the intellectuals. Ernest Haeckel, a great scientist, and of still greater daring, immediately drew in his book, "Natural Creation," most daring conclusions against religion. So, while Darwinism met with the most enthusiastic reception by the progressive bourgeoisie, it was also bitterly opposed by the reactionists.

The same struggle also took place in other European countries. Everywhere the progressive liberal bourgeoisie had to struggle against reactionary powers. These reactionists possessed, or were trying to obtain through religious followers, the power coveted. Under these circumstances, even the scientific discussions were carried on with the zeal and passion of a class struggle. The writings that apeared pro and con on Darwin have therefore the character of social

polemics, despite the fact that they bear the names of scientific authors. Many of Haeckel's popular writings, when looked at from a scientific standpoint, are very superficial, while the arguments and remonstrances of his opponents show unbelievable foolishness that can only be met in the arguments used against Marx.

The struggle, carried on by the liberal bourgeoisie against feudalism was not fought to its finish. This was partly owing to the fact that everywhere Socialist proletarians made their appearance, threatening all ruling powers, including the bourgeoisie. The liberal bourgeoisie relented, while the reactionary tendencies gained an upper hand. The former zeal in combatting religion disappeared entirely, and while it is true that the liberals and reactionists were still fighting among each other, in reality, however, they neared each other. The interest formerly manifested in science as a weapon in the class struggle, has entirely disappeared, while the reactionary tendency that the masses must be brought to religion, became ever more pronounced.

The estimation of science has also undergone a change. Formerly the educated bourgeoisie founded upon science a materialistic conception of the universe, wherein they saw the solution of the universal riddle. Now mysticism has gained the upper hand; all that was solved appeared as very trivial, while all things that remained unsolved, appeared as very great indeed, embracing the most important life question. A sceptical, critical and doubting frame of mind has taken the place of the former jubilant spirit in favor of science.

This could also be seen in the stand taken against Darwin. "What does his theory show? It leaves

unsolved the universal riddle! Whence comes this wonderful nature of transmission, whence the ability of animate beings to change so fitly?" Here lies the mysterious life riddle that could not be overcome with mechanical principles. Then, what was left of Darwinism by the light of later criticism?

Of course, the advance of science began to make rapid progress. The solution of one problem always brings a few more problems to the surface to be solved, which were hidden underneath the theory of transmission that Darwin had to accept as a basis of inquiry was ever more investigated, a hot discussion arose about the individual factors of development and the struggle for existence. While a few scientists directed their attention to variation, which they considered due to exercise and adaptation to life (following the principle laid down by Lamarck) this idea was expressly denied by scientists like Weissman and others. While Darwin only assumed gradual and slow changes, De Vries found sudden and leaping cases of variation resulting in the sudden appearance of new species. All this, while it went to strengthen and develop the theory of descent, in some cases made the impression that the new discoveries rent asunder the Darwinian theory, and therefore every new discovery that made it appear so was hailed by the reactionists as a bankruptcy of Darwinism. This social conception had its influence on science. Reactionary scientists claimed that a spiritual element is necessary. The supernatural and insolvable has taken the place of Darwinism and that class which in the beginning was the banner bearer of Darwinism became ever more reactionary.

V. DARWINISM VERSUS SOCIALISM.

Darwinism has been of inestimable service to the bourgeoisie in its struggle against the old powers. It was therefore only natural that bourgeoisdom should apply it against its later enemy, the proletarians; not because the proletarians were antagonistically disposed to Darwinism, but just the reverse. As soon as Darwinism made its appearance, the proletarian vanguard, the Socialists, hailed the Darwinian theory, because in Darwinism they saw a corroboration and completion of their own theory; not as some superficial opponents believe, that they wanted to base Socialism upon Darwinism but in the sense that the Darwinian discovery,—that even in the apparently stagnant organic world there is a continuous development—is a glorious corroboration and completion of the Marxian theory of social development.

Yet it was natural for the bourgeoisie to make use of Darwinism against the proletarians. The bourgeoisie had to contend with two armies, and the reactionary classes know this full well. When the bourgeoisie attacks their authority, they point at the proletarians and caution the bourgeoisie to beware lest all authority crumble. In doing this, the reactionists mean to frighten the bourgeoisie so that they may desist from any revolutionary activity. Of course, the bourgeois representatives answer that there is nothing to fear; that their science but refutes the groundless authority of the nobility and supports them in their struggle against enemies of order.

At a congress of naturalists, the reactionary politician and scientist Virchow assailed the Darwinian theory on the ground that it supported Socialism. "Be

careful of this theory," he said to the Darwinists, "for this theory is very nearly related to the theory that caused so much dread in our neighboring country." This allusion to the Paris Commune, made in the year famous for the hunting of Socialists, must have had a great effect. What shall be said, however, about the science of a professor who attacks Darwinism with the argument that it is not correct because it is dangerous! This reproach, of being in league with the red revolutionists, caused a lot of annoyance to Haeckel, the defendant of this theory. He could not stand it. Immediately afterwards he tried to demonstrate that it is just the Darwinian theory that shows the untenableness of the Socialist demands, and that Darwinism and Socialism "endure each other as fire and water."

Let us follow Haeckel's contentions, whose main thoughts re-occur in most authors who base their arguments against Socialism on Darwinism.

Socialism is a theory which presupposes natural equality for people, and strives to bring about social equality; equal rights, equal duties, equal possessions and equal enjoyments. Darwinism, on the contrary, is the scientific proof of inequality. The theory of descent establishes the fact that animal development goes in the direction of ever greater differentiation or division of labor; the higher or more perfect the animal, the greater the inequality existing. The same holds also good in society. Here, too, we see the great division of labor between vocations, class, etc., and the higher we stand in social development the greater become the inequalities in strength, ability and faculty. The theory of descent is therefore to be recommended

as "the best antidote to the Socialist demand of making all equal."

The same holds good, but to a greater extent, of the Darwinian theory of survival. Socialism wants to abolish competition and the struggle for existence. But Darwinism teaches us that this struggle is unavoidable and is a natural law for the entire organic world. Not only is this struggle natural, but it is also useful and beneficial. This struggle brings an ever greater perfection, and this perfection consists in an ever greater extermination of the unfit. Only the chosen minority, those who are qualified to withstand competition, can survive; the great majority must perish. Many are called, but few are chosen. The struggle for existence results at the same time in a victory for the best, while the bad and unfit must perish. This may be lamentable, just as it is lamentable that all must die, but the fact can neither be denied nor changed.

We wish to remark here how a small change of almost similar words serves as a defence of capitalism. Darwin spoke about the survival of the fittest, of those that are best fitted to the conditions. Seeing that in this struggle those that are better organized conquer the others, the conquerors were called the vigilant, and later the "best." This expression was coined by Herbert Spencer. In thus winning on their field, the conquerors in the social struggle, the large capitalists, were proclaimed the best people.

Haeckel retained and still upholds this conception. In 1892 he said, "Darwinism, or the theory of selection, is thoroughly aristocratic; it is based upon the survival of the best. The division of labor brought about by development causes an ever greater variation in char-

acter, an ever greater inequality among the individuals, in their activity, education and condition. The higher the advance of human culture, the greater the difference and gulf between the various classes existing. Communism and the demands put up by the Socialists in demanding an equality of conditions and activity is synonymous with going back to the primitive stages of barbarism."

The English philosopher Herbert Spencer already had a theory on social growth before Darwin. This was the bourgeois theory of individualism, based upon the struggle for existence. Later he brought this theory into close relation with Darwinism. "In the animal world," he said, "the old, weak and sick are ever rooted out and only the strong and healthy survive. The struggle for existence serves therefore as a purification of the race, protecting it from deterioration. This is the happy effect of this struggle, for if this struggle should cease and each one were sure of procuring its existence without any struggle whatsoever, the race would necessarily deteriorate. The support given to the sick, weak and unfit causes a general race degeneration. If sympathy, finding its expressions in charity, goes beyond its reasonable bounds, it misses its object; instead of diminishing, it increases the suffering for the new generations. The good effect of the struggle for existence can best be seen in wild animals. They are all strong and healthy because they had to undergo thousands of dangers wherein all those that were not qualified had to perish. Among men and domestic animals sickness and weakness are so general because the sick and weak are preserved. Socialism, having as its aim to abolish the struggle for existence in the human world, will neces-

sarily bring about an ever growing mental and physical deterioration."

These are the main contentions of those who use Darwinism as a defence of the bourgeois system. Strong as these arguments might appear at first sight. they were not hard for the Socialists to overcome. To a large extent, they are the old arguments used against Socialism, but wearing the new garb of Darwinistic terminology, and they show an utter ignorance of Socialism as well as of capitalism.

Those who compare the social organism with the animal body leave unconsidered the fact that men do not differ like various cells or organs, but only in degree of their capacity. In society the division of labor cannot go so far that all capacities should perish at the expense of one. What is more, everyone who understands something of Socialism knows that the efficient division of labor does not cease with Socialism; that first under Socialism real divisions will be possible. The difference between the workers, their ability, and employments will not cease; all that will cease is the difference between workers and exploiters.

While it is positively true that in the struggle for existence those animals that are strong, healthy and well survive, yet this does not happen under capitalist competition. Here victory does not depend upon perfection of those engaged in the struggle, but in something that lies outside of their body. While this struggle may hold good with the small bourgeois. where success depends upon personal abilities and qualifications, yet with the further development of capital, success does not depend upon personal abilities, but upon the possession of capital. The one who has a larger capital at command will soon conquer the

one who has a smaller capital at his disposal, although the latter may be more skillful. It is not the personal qualities, but the possession of money that decides who the victor shall be in the struggle. When the small capitalists perish, they do not perish as men but as capitalists; they are not weeded out from among the living, but from the bourgeoisie. They still exist, but no longer as capitalists. The competition existing in the capitalist system is therefore something different in requisites and results from the animal struggle for existence.

Those people that perish as people are members of an entirely different class, a class that does not take part in the competitive struggle. The workers do not compete with the capitalists, they only sell their labor power to them. Owing to their being propertyless, they have not even the opportunity to measure their great qualities and enter a race with the capitalists. Their poverty and misery cannot be attributed to the fact that they fell in the competitive struggle on account of weakness, but because they were paid very little for their labor power, it is for this very reason that, although their children are born strong and healthy, they perish in great mass, while the children born to rich parents, although born sick, remain alive by means of the nourishment and great care that is bestowed on them. These children of the poor do not die because they are sick or weak, but because of external cause. It is capitalism which creates all those unfavorable conditions by means of exploitation, reduction of wages, unemployment, crises, bad dwellings, and long hours of employment. It is the capitalist system that causes so many strong and healthy ones to succumb.

Thus the Socialists prove that, different from the animal world, the competitive struggle existing between men does not bring forth the best and most qualified, but destroys many strong and healthy ones because of their poverty, while those that are rich, even if weak and sick, survive. Socialists prove that personal strength is not the determining factor, but it is something outside of man; it is the possession of money that determines who shall survive and who shall perish.

VI. NATURAL LAW AND SOCIAL THEORY.

The false conclusions reached by Haeckel and Spencer on Socialism are no surprise. Darwinism and Marxism are two distinct theories, one of which applies to the animal world, while the other applies to society. They supplement each other in the sense that, according to the Darwinian theory of evolution, the animal world develops up to the stage of man, and from then on, that is, after the animal has risen to man, the Marxian theory of evolution applies. When, however, one wishes to carry the theory of one domain into that of the other, where different laws are applicable, he must draw wrong inferences.

Such is the case when we wish to ascertain from natural law what social form is natural and applicable, and this is just what the bourgeois Darwinists did. They drew the inference that the laws which govern in the animal world, where the Darwinian theory applies, apply with equal force in the capitalist system, and that therefore capitalism is a natural order and must endure forever. On the other hand, there were

some Socialists who desired to prove that, according to Darwin, the Socialist system is the natural one. Said these Socialists, "Under capitalism men do not carry on the struggle for existence with like tools, but with unlike ones artificially made. The natural superiority of those that are healthier, stronger, more intelligent or morally better, is of no avail so long as birth, class, or the possession of money control this struggle. Socialism, in abolishing all these artificial dissimilarities, will make equal provisions for all, and then only will the struggle for existence prevail, wherein the real personal superiorities will be the deciding factors."

These critical arguments, while they are not bad when used as refutations against bourgeois Darwinists, are still faulty. Both sets of arguments, those used by the bourgeois Darwinists in favor of capitalism, and those of the Socialists, who base their Socialism on Darwin, are falsely rooted. Both arguments, although reaching opposite conclusions, are equally false because they proceed from the wrong premises that there is a natural and a permanent system of society.

Marxism has taught us that there is no such thing as a natural and a permanent social system, and that there can be none, or, to put it another way, every social system is natural, for every social system is necessary and natural under given conditions. There is not a single definite social system that can be accepted as natural; the various social systems take the place of one another as a result of developments in the means of production. Each system is therefore the natural one for its particular time. Capitalism is not the only natural order, as the bourgeoisie believes, and

no Socialist system is the only natural system, as some Socialists try to prove. Capitalism was natural under the conditions of the nineteenth century, just as feudalism was in the Middle Ages, and as Socialism will be in the coming age. The attempt to put forward a certain system as the only natural and permanent one is as futile as if we were to take an animal and say that this animal is the most perfect of all animals. Darwinism teaches us that every animal is equally adapted and equally perfect in form to suit its special environments, and Marxism teaches us that every social system is particularly adapted to its conditions, and that in this sense it may be called good and perfect.

Herein lies the main reason why the endeavor of the bourgeois Darwinists to defend the foundering capitalist system is bound to fail. Arguments based on natural science, when applied to social questions, must almost always lead to reverse conclusions. This happens because, while nature is very slow in its development and changes within the ken of human history are imperceptible, so that it may almost be regarded as stable, human society nevertheless undergoes quick and continuous changes. In order to understand the moving force and the cause of social development, we must study society as such. It is only here that we can find the reason of social development. Marxism and Darwinism should remain in their own domains; they are independent of each other and there is no direct connection between them.

Here arises a very important question. Can we stop at the conclusion that Marxism applies only to society and that Darwinism applies only to the organic world, and that neither of these theories is ap-

plicable in the other domain? In practice it is very convenient to have one principle for the human world and another one for the animal world. In having this, however, we forget that man is also an animal. Man has developed from an animal, and the laws that apply to the animal world cannot suddenly lose their applicability to man. It is true that man is a very peculiar animal, but if that is the case it is necessary to find from these very peculiarities why those principles applicable to all animals do not apply to men, and why they assume a different form.

Here we come to another grave problem. The bourgeois Darwinists do not encounter such a problem; they simply declare that man is an animal, and without further ado they set about to apply the Darwinian principles to men. We have seen to what erroneous conclusions they come. To us this question is not so simple; we must first be clear about the differences between men and animals, and then we can see why, in the human world, the Darwinian principles change into different ones, namely, into Marxism.

VII. THE SOCIABILITY OF MAN.

The first peculiarity that we observe in man is that he is a social being. In this he does not differ from all animals, for even among the latter there are many species that live socially among themselves. But man differs from all those that we have observed until now in dealing with the Darwinian theory; he differs from those animals that do not live socially, but that struggle with each other for subsistence. It is not with the rapacious animals which live separately that

man must be compared, but with those that live socially. The sociability of animals is a power that we have not yet spoken of; a power that calls forth new qualities among animals.

It is an error to regard the struggle for existence as the only power giving shape to the organic world. The struggle for existence is the main power that causes the origin of new species, but Darwin himself knew full well that other powers co-operate which give shape to the forms, habits, and peculiarities of animate things. In his "Descent of Man" Darwin elaborately treated sexual selection and showed that the competition of males for females gave rise to the gay colors of the birds and butterflies and also to the singing voices of birds. There he also devoted a chapter to social living. Many illustrations on this head are also to be found in Kropotkin's book, "Mutual Aid as a Factor in Evolution." The best representation of the effects of sociability are given in Kautsky's "Ethics and the Materialistic Conception of History."

When a number of animals live in a group, herd or flock, they carry on the struggle for existence in common against the outside world; within such a group the struggle for existence ceases. The animals which live socially no longer wage a struggle against each other, wherein the weak succumb; just the reverse, the weak enjoy the same advantages as the strong. When some animals have the advantage by means of greater strength, sharper smell, or experience in finding the best pasture or in warding off the enemy, this advantage does not accrue only to these better fitted, but also to the entire group. This combining of the animals' separate powers into one unit gives to the group a new and much stronger power

than any one individual possessed, even the strongest. It is owing to this united strength that the defenseless plant-eaters can ward aff rapacious animals. It is only by means of this unity that some animals are able to protect their young.

A second advantage of sociability arises from the fact that where animals live socially, there is a possibility of the division of labor. Such animals send out scouts or place sentinels whose object it is to look after the safety of all, while others spend their time either in eating or in plucking, relying upon their guards to warn them of danger.

Such an animal society becomes, in some respects, a unit, a single organism. Naturally, the relation remains much looser than the cells of a single animal body; nevertheless, the group becomes a coherent body, and there must be some power that holds together the individual members.

This power is found in the social motives, the instinct that holds them together and causes the continuance of the group. Every animal must place the interest of the entire group above his own; it must always act instinctively for the advantage and maintenance of the group without consideration of itself. As long as the weak plant-eaters think of themselves only and run away when attacked by a rapacious animal, each one minding his life only, the entire herd disappears. Only when the strong motive of self-preservation is suppressed by a stronger motive of union, and each animal risks its life for the protection of all, only then does the herd remain and enjoy the advantages of sticking together. In such a case, self-sacrifice, bravery, devotion, discipline and consciousness must

arise, for where these do not exist society dissolves; society can only exist where these exist.

These instincts, while they have their origin in habit and necessity, are strengthened by the struggle for existence. Every animal herd still stands in a competitive struggle against the same animals of a different herd; those that are best fitted to withstand the enemy will survive, while those that are poorer equipped will perish. That group in which the social instinct is better developed will be able to hold its ground, while the group in which social instinct is low will either fall an easy prey to its enemies or will not be in a position to find favorable feeding places. These social instincts become therefore the most important and decisive factors that determine who shall survive in the struggle for existence. It is owing to this that the social instincts have been elevated to the position of predominant factors.

These relations throw an entirely new light upon the views of the bourgeois Darwinists. Their claim is that the extermination of the weak is natural and that it is necessary in order to prevent the corruption of the race, and that the protection given to the weak serves to deteriorate the race. But what do we see? In nature itself, in the animal world, we find that the weak are protected; that it is not by their own personal strength that they maintain themselves, and that they are not brushed aside on account of their personal weakness. This arrangement does not weaken the group, but gives to it new strength. The animal group in which mutual aid is best developed is best fit to maintain itself in the strife. That which, according to the narrow conception appeared as a cause of weakness, becomes just the reverse, a cause of strength.

The sociable animals are in a position to beat those that carry on the struggle individually. This so-called degenerating and deteriorating race carries off the victory and practically proves itself to be the most skilful and best.

Here we first see fully how near sighted, narrow and unscientific are the claims and arguments of the bourgeois Darwinists. Their natural laws and their conceptions of what is natural are derived from a part of the animal world, from those which man resembles least, while those animals that practically live under the same circumstances as man are left unobserved. The reason for this can be found in the bourgeoise's own circumstances; they themselves belong to a class where each competes individually against the other; therefore, they see among animals only that form of the struggle for existence. It is for this reason that they overlook those forms of the struggle that are of greatest importance to men.

It is true that these bourgeois Darwinists are aware of the fact that man is not ruled by mere egoism without regard for his neighbors. The bourgeois scientists say very often that every man is possessed of two feelings, the egotistical, or self-love, and the altruistic, the love of others. But as they do not know the social origin of this altruism, they cannot understand its limitations and conditions. Altruism in their mouths becomes a very indistinct idea which they don't know how to handle.

Everything that applies to the social animals applies also to man. Our ape-like ancestors and the primitive men developing from them were all defenseless, weak animals who, as almost all apes do, lived in tribes. Here the same social motives and instincts

had to arise which later developed to moral feelings. That our customs and morals are nothing other than social feelings, feelings that we find among animals, is known to all; even Darwin spoke about "the habits of animals which would be called moral among men." The difference is only in the measure of consciousness; as soon as these social feelings become clear to men, they assume the character of moral feelings. Here we see that the moral conception—which bourgeois authors considered as the main distinction between men and animals—is not common to men, but is a direct product of conditions existing in the animal world.

It is in the nature of the origin of these moral feelings that they do not spread further than the social group to which the animal or the man belongs. These feelings serve the practical object of keeping the group together; beyond this they are useless. In the animal world, the range and nature of the social group is determined by the circumstances of life, and therefore the group almost always remains the same. Among men, however, the groups, these social units, are ever changing in accordance with economic development, and this also changes the social instincts.

The original groups, the stems of the wild and barbarian people, were more strongly united than the animal groups. Family relationship and a common language strengthened this union further. Every individual had the support of the entire tribe. Under such conditions, the social motives, the moral feelings, the subordination of the individual to the whole, must have developed to the utmost. With the further development of society, the tribes are dissolved and their places are taken by new unions, by towns and peoples.

New formations step into the place of the old ones, and the members of these groups carry on the struggle for existence in common against other peoples. In equal ratio with economic development, the size of these unions increases, the struggle of each against the other decreases, and social feelings spread. At the end of ancient times we find that all the people known then formed a unit, the Roman Empire, and at that time arose the theory—the moral feelings having their influence on almost all the people—which led to the maxim that all men are brothers.

When we regard our own times, we see that economically all the people form one unit, although a very weak one; nevertheless the abstract feeling of brotherhood becomes ever more popular. The social feelings are strongest among members of the same class, for classes are the essential units embodying particular interests and including certain members. Thus we see that the social units and social feelings change in human society. These changes are brought about by economic changes, and the higher the stage of economic development, the higher and nobler the social feelings.

VIII. TOOLS, THOUGHT AND LANGUAGE.

Sociability, with its consequences, the moral feelings, is a peculiarity which distinguishes man from some, but not from all, animals. There are, however, some peculiarities which belong to man only, and which separate him from the entire animal world. These, in the first instance, are language, then reason. Man is also the only animal that makes use of self-made tools.

For all these things, animals have but the slightest propensity, but among men, these have developed essentially new characteristics. Many animals have some kind of voice, and by means of sounds they can come to some understanding, but only man has such sounds as serve as a medium for naming things and actions. Animals also have brains with which they think, but the human mind shows, as we shall see later, an entirely new departure, which we designate as reasonable or abstract thinking. Animals, too, make use of inanimate things which they use for certain purposes; for instance, the building of nests. Monkeys sometimes use sticks or stones, but only man uses tools which he himself deliberately makes for particular purposes. These primitive tendencies among animals show us that the peculiarities possessed by man came to him, not by means of some wonderful creation, but by continuous development.

Animals living isolated can not arrive at such a stage of development. It is only as a social being that man can reach this stage. Outside the pale of society, language is just as useless as an eye in darkness, and is bound to die. Language is possible only in society, and only there is it needed as a means by which members may understand one another. All social animals possess some means of understanding each other, otherwise they would not be able to execute certain plans conjointly. The sounds that were necessary as a means of communication for the primitive man while at his tasks must have developed into names of activities, and later into names of things,

The use of tools also presupposes a society, for it is only through society that attainments can be preserved. In a state of isolated life every one has to

make discoveries for himself; with the death of the discoverer the discovery also becomes extinct, and each has to start anew from the very beginning. It is only through society that the experience and knowledge of former generations can be preserved, perpetuated, and developed. In a group or body a few may die, but the group, as such, does not. It remains. Knowledge in the use of tools is not born with man, but is acquired later. Mental tradition, such as is possible only in society, is therefore necessary.

While these special characteristics of man are inseparable from his social life, they also stand in strong relation to each other. These characteristics have not been developed singly, but all have progressed in common. That thought and language can exist and develop only in common is known to everyone who has but tried to think of the nature of his own thoughts. When we think or consider, we, in fact, talk to ourselves; we observe then that it is impossible for us to think clearly without using words. Where we do not think with words our thoughts remain indistinct and we can not combine the various thoughts. Every one can realize this from his own experience. This is because so-called abstract reason is perceptive thought and can take place only by means of perceptions. Perceptions we can designate and hold only by means of names. Every attempt to broaden our minds, every attempt to advance our knowledge must begin by distinguishing and classifying by means of names or by giving to the old ones a more precise meaning. Language is the body of the mind, the material by which all human science can be built up.

The difference between the human mind and the animal mind was very aptly shown by Schopenhauer.

This citation is quoted by Kautsky in his "Ethics and the Materialist Conception of History" (pages 139-40 English Translation). The animal's actions are dependent upon visual motives, it is only by these that it sees, hears or observes in any other way. We can always tell what induced the animal to do this or the other act, for we, too, can see it if we look. With man, however, it is entirely different. We can not foretell what he will do, for we do not know the motives that induce him to act; they are thoughts in his head. Man considers, and in so doing, all his knowledge, the result of former experience, comes into play, and it is then that he decides how to act. The acts of an animal depend upon immediate impression, while those of man depend upon abstract conceptions, upon his thinking and perceiving. Man is at the same time influenced by finer invisible motives. Thus all his movements bear the impress of being guided by principles and intentions which give them the appearance of independence and obviously distinguishes them from those of animals.

Owing to their having bodily wants, men and animals are forced to seek to satisfy them in the natural objects surrounding them. The impression on the mind is the immediate impulse and beginning; the satisfaction of the wants is the aim and end of the act. With the animal, action follows immediately after impression. It sees its prey or food and immediately it jumps, grasps, eats, or does that which is necessary for grasping, and this is inherited as an instinct. The animal hears some hostile sound, and immediately it runs away if its legs are so developed to run quickly, or lies down like dead so as not to be seen if its color serves as a protector. Between man's impressions

and acts, however, there comes into his head a long chain of thoughts and considerations. His actions will depend upon the result of these considerations.

Whence comes this difference? It is not hard to see that it is closely associated with the use of tools. In the same manner that thought arises between man's impressions and acts, the tool comes in between man and that which he seeks to attain. Furthermore, since the tool stands between man and outside objects, thought must arise between the impression and the performance. Man does not start empty-handed against his enemy or tear down fruit, but he goes about it in a roundabout manner, he takes a tool, a weapon (weapons are also tools) which he uses against the hostile animal; therefore his mind must also make the same circuit, not follow the first impressions, but it must think of the tools and then follow to the object. This material circuit causes the mental circuit; the thoughts leading to a certain act are the result of the tools necessary for the performance of the act.

Here we took a very simple case of primitive tools and the first stages of mental development. The more complicated technique becomes, the greater is the material circuit, and as a result the mind has to make greater circuits. When each made his own tools, the thought of hunger and struggle must have directed the human mind to the making of tools. Here we have a longer chain of thoughts between the impressions and the ultimate satisfaction of men's needs. When we come down to our own times, we find that this chain is very long and complicated. The worker who is discharged foresees the hunger that is bound to come; he buys a newspaper in order to see whether

there is any demand for laborers; he goes to the railroad, offers himself for a wage which he will get only long afterwards, so that he may be in a position to buy food and thus protect himself from starvation. What a long circuitous chain the mind must make before it reaches its destiny. But it agrees with our highly developed technique, by means of which man can satisfy his wants.

Man, however, does not rule over one tool only, but over many, which he applies for different purposes, and from which he can choose. Man, because of these tools, is not like the animal. The animal never advances beyond the tools and weapons with which it was born, while man makes his tools and changes them at will. Man, being an animal using different tools, must possess the mental ability to choose them. In his head various thoughts come and go, his mind considers all the tools and the consequences of their application, and his actions depend upon these considerations. He also combines one thought with another, and holds fast to the idea that fits in with his purpose.

Animals have not this capacity; it would be useless for them for they would not know what to do with it. On account of their bodily form, their actions are circumscribed within narrow bounds. The lion can only jump upon his prey, but can not think of catching it by running after it. The hare is so formed that it can run; it has no other means of defense although it may like to have. These animals have nothing to consider except the moment of jumping or running. Every animal is so formed as to fit into some definite place. Their actions must become strong habits. These habits are not unchangeable. Animals

are not machines, when brought into different circumstances they may acquire different habits. It is not in the quality of their brains, but in the formation of their bodies that animal restrictions lie. The animal's action is limited by its bodily form and surroundings, and consequently it has little need for reflection. To reason would therefore be useless for it and would only lead to harm rather than to good.

Man, on the other hand, must possess this ability because he exercises discretion in the use of tools and weapons, which he chooses according to particular requirements. If he wants to kill the fleet hare, he takes the bow and arrow; if he meets the bear, he uses the axe, and if he wants to break open a certain fruit he takes a hammer. When threatened by danger, man must consider whether he shall run away or defend himself by fighting with weapons. This ability to think and to consider is indispensable to man in his use of artificial tools.

This strong connection between thoughts, language, and tools, each of which is impossible without the other, shows that they must have developed at the same time. How this development took place, we can only conjecture. Undoubtedly it was a change in the circumstances of life that changed men from our ape-like ancestors. Having migrated from the woods, the original habitat of apes, to the plain, man had to undergo an entire change of life. The difference between hands and feet must have developed then. Sociability and the ape-like hand, well adapted for grasping, had a due share in the new development. The first rough objects, such as stones or sticks, came to hand unsought, and were thrown away. This must have been

repeated so often that it must have left an impression on the minds of those primitive men.

To the animal, surrounding nature is a single unit, of the details of which it is unconscious. It can not distinguish between various objects. Our primitive man, at his lowest stage, must have been at the same level of consciousness. From the great mass surrounding him, some objects (tools) come into his hands which he used in procuring his existence. These tools, being very important objects, soon were given some designation, were designated by a sound which at the same time named the particular activity. Owing to this sound, or designation, the tool and the particular kind of activity stands out from the rest of the surroundings. Man begins to analyze the world by concepts and names, self-consciousness makes its appearance, artificial objects are purposely sought and knowingly made use of while working.

This process—for it is a very slow process—marks the beginning of our becoming men. As soon as men deliberately seek and apply certain tools, we can say that these are being developed; from this stage to the manufacturing of tools, there is only one step. The first crude tools differ according to use; from the sharp stone we get the knife, the bolt, the drill, and the spear; from the stick we get the hatchet. With the further differentiation of tools, serving later for the division of labor, lang ge and thought develop into richer and newer forms, while thought leads man to use the tools in a better way, to improve old and invent new ones.

So we see that one thing brings on the other. The practice of sociability and the application to labor are the springs in which technique, thought, tools and

science have their origin and continually develop. By his labor, the primitive ape-like man has risen to real manhood. The use of tools marks the great departure that is ever more widening between men and animals.

IX. ANIMAL ORGANS AND HUMAN TOOLS.

In animal organs and human tools we have the main difference between men and animals. The animal obtains its food and subdues its enemies with its own bodily organs; man does the same thing with the aid of tools. Organ (organon) is a Greek word which also means tools. Organs are natural, adnated (grown-on) tools of the animal. Tools are the artificial organs of men. Better still, what the organ is to the animal, the hand and tool is to man. The hands and tools perform the functions that the animal must perform with its own organs. Owing to the construction of the hand to hold various tools, it becomes a general organ adapted to all kinds of work; it becomes therefore an organ that can perform a variety of functions.

With the division of these functions, a broad field of development is opened for men which anmials do not know. Because the human hand can use various tools, it can combine the functions of all possible organs possessed by animals. Every animal is built and adapted to a certain definite surrounding. Man, with his tools, is adapted to all circumstances and equipped for all surroundings. The horse is built for the prairie, and the monkey is built for the forest. In the forest, the horse would be just as helpless as the monkey would be if brought to the prairie. Man, on the other hand, uses the axe in the forest, and the spade

on the prairie. With his tools, man can force his way in all parts of the world and establish himself all over. While almost all animals can live in particular regions, such as supply their wants, and if taken to different regions cannot exist, man has conquered the whole world. Every animal has, as a zoölogist expressed it once, its strength by which means it maintains itself in the struggle for existence, and its weakness, owing to which it falls a prey to others and cannot multiply itself. In this sense, man has only strength and no weakness. Owing to his having tools, man is the equal of all animals. As these tools do not remain stationary, but continually improve, man grows above every animal. His tools make him master of all creation, the king of the earth.

In the animal world there is also a continuous development and perfection of organs. This development, however, is connected with the changes of the animal's body, which makes the development of the organs infinitely slow, as dictated by biological laws. In the development of the organic world, thousands of years amount to nothing. Man, however, by transferring his organic development upon external objects, has been able to free himself from the chain of biologic law. Tools can be transformed quickly, and technique makes such rapid strides that, in comparison with the development of animal organs, it must be called marvelous. Owing to this new road, man has been able, within the short period of a few thousand years, to rise above the highest animal. With the invention of these implements, man got to be a divine power, and he takes possession of the earth as his exclusive dominion. The peaceful and hitherto unhindered development of the organic world ceases to develop accord-

ing to the Darwinian theory. It is man that acts as breeder, tamer, cultivator; and it is man that does the weeding. It is man that changes the entire environment, making the further forms of plants and animals suit his aim and will.

With the origin of tools, further changes in the human body cease. The human organs remain what they were, with the exception of the brain. The human brain had to develop together with tools; and, in fact, we see that the difference between the higher and lower races of mankind consists mainly in the contents of their brains. But even the development of this organ had to stop at a certain stage. Since the beginning of civilization, the functions of the brain are ever more taken away by some artificial means; science is treasured up in books. Our reasoning faculty of today is not much better than the one possessed by the Greeks, Romans or even the Teutons, but our knowledge has grown immensely, and this is greatly due to the fact that the mental organ was unburdened by its substitutes, the books.

Having learned the difference between men and animals, let us now again consider how they are affected by the struggle for existence. That this struggle is the cause of perfection and the weeding out of the imperfect, can not be denied. In this struggle the animals become ever more perfect. Here, however, it is necessary to be more precise in expression and in observation of what perfection consists. In being so, we can no longer say that animals as a whole struggle and become perfected. Animals struggle and compete by means of their particular organs. Lions do not carry on the struggle by means of their tails; hares do

not rely on their eyes; nor do the falcons succeed by means of their beaks. Lions carry on the struggle by means of their saltatory (leaping) muscles and their teeth; hares rely upon their paws and ears, and falcons succeed on account of their eyes and wings. If now we ask what is it that struggles and what competes? the answer is, the organs struggle. The muscles and teeth of the lion, the paws and ears of the hare, and the eyes and wings of the falcon carry on the struggle. It is in this struggle that the organs become perfected. The animal as a whole depends upon these organs and shares their fate.

Let us now ask the same question about the human world. Men do not struggle by means of their natural organs, but by means of artificial organs, by means of tools (and in weapons we must understand tools). Here, too, the principle of perfection and the weeding out of the imperfect, through struggle, holds true. The tools struggle, and this leads to the ever greater perfection of tools. Those groups of tribes that use better tools and weapons can best secure their maintenance, and when it comes to a direct struggle with another race, the race that is better equipped with artificial tools will win. Those races whose technical aids are better developed, can drive out or subdue those whose artificial aids are not developed. The European race dominates because its external aids are better.

Here we see that the principle of the struggle for existence, formulated by Darwin and emphasized by Spencer, has a different effect on men than on animals. The principle that struggle leads to the perfection of the weapons used in the strife, leads to different results between men and animals. In the animal, it

leads to a continuous development of natural organs; that is the foundation of the theory of descent, the essence of Darwinism. In men, it leads to a continuous development of tools, of the means of production. This, however, is the foundation of Marxism.

Here we see that Marxism and Darwinism are not two independent theories, each of which applies to its special domain, without having anything in common with the other. In reality, the same principle underlies both theories. They form one unit. The new course taken by men, the substitution of tools for natural organs, causes this fundamental principle to manifest itself differently in the two domains; that of the animal world to develop according to Darwinian principle, while among mankind the Marxian principle applies.

When men freed themselves from the animal world, the development of tools and productive methods, the division of labor and knowledge became the propelling force in social development. It is these that brought about the various systems, such as primitive communism, the peasant system, the beginnings of commodity production, feudalism, and now modern capitalism, and which bring us ever nearer to Socialism.

X. CAPITALISM AND SOCIALISM.

The particular form that the Darwinian struggle for existence assumes in development is determined by men's sociability and their use of tools. The struggle for existence, while it is still carried on among members of different groups, nevertheless ceases among

members of the same group, and its place is taken by mutual aid and social feeling. In the struggle between groups, technical equipment decides who shall be the victor; this results in the progress of technique. These two circumstances lead to different effects under different systems. Let us see in what manner they work out under capitalism.

When the bourgeoisie gained political power and made the capitalist system the dominating one, it began by breaking the feudal bonds and freeing the people from all feudal ties. It was essential for capitalism that every one should be able to take part in the competitive struggle; that no one's movements be tied up or narrowed by corporate duties or hampered by legal statutes, for only thus was it possible for production to develop its full capacity. The workers must have free command over themselves and not be tied up by feudal or guild duties, for only as free workers can they sell their labor-power to the capitalists as a whole commodity, and only as free laborers can the capitalists use them. It is for this reason that the bourgeoisie has done away with all old ties and duties. It made the people entirely free, but at the same time left them entirely isolated and unprotected. Formerly the people were not isolated; they belonged to some corporation; they were under the protection of some lord or commune, and in this they found strength. They were a part of a social group to which they owed duties and from which they received protection. These duties the bourgeoisie abolished; it destroyed the corporations and abolished the feudal relations. The freeing of labor meant at the same time that all refuge was taken away from him and that he could no longer rely upon others.

Every one had to rely upon himself. Alone, free from all ties and protection, he must struggle against all.

It is for this reason that, under capitalism, the human world resembles mostly the world of rapacious animals, and it is for this very reason that the bourgeois Darwinists looked for men's prototype among animals living isolated. To this they were led by their own experience. Their mistake, however, consisted in considering capitalist conditions as everlasting. The relation existing between our capitalist competitive system and animals living isolated, was thus expressed by Engels in his book, "Anti-Dühring" (page 293). This may also be found on page 59 of "Socialism, Utopian and Scientific" as follows:

"Finally, modern industry and the opening of the world market made the struggle universal and at the same time gave it unheard-of virulence. Advantages in natural or artificial conditions of production now decide the existence or non-existence of individual capitalists as well as of whole industries and countries. He that falls is remorselessly cast aside. It is the Darwinian struggle of the individual for existence transferred from Nature to society with intensified violence. The conditions of existence natural to the animal appear as the final term of human development."

What is that which carries on the struggle in this capitalist competition, the perfectness of which decides the victory?

First come technical tools, machines. Here again applies the law that struggle leads to perfection. The machine that is more improved outstrips the less improved, the machines that cannot perform much, and the simple tools are exterminated and machine tech-

nique develops with gigantic strides to ever greater productivity. This is the real application of Darwinism to human society. The particular thing about it is that under capitalism there is private property, and behind every machine there is a man. Behind the gigantic machine there is a big capitalist and behind the small machine there is a small capitalist. With the defeat of the small machine, the small capitalist, as capitalist, perishes with all his hopes and happiness.

At the same time the struggle is a race of capital. Large capital is better equipped; large capital is getting ever larger. This concentration of capital undermines capital itself, for it diminishes the bourgeoisie whose interest it is to maintain capitalism, and it increases that mass which seeks to abolish it. In this development, one of the characteristics of capitalism is gradually abolished. In the world where each struggles against all and all against each, a new association develops among the working class, the class organization. The working class organizations start with ending the competition existing between workers and combine their separate powers into one great power in their struggle with the outside world. Everything that applies to social groups also applies to this class organization, brought about by natural conditions. In the ranks of this class organization, social motives, moral feelings, self-sacrifice and devotion for the entire body develop in a most splendid way. This solid organization gives to the working class that great strength which it needs in order to conquer the capitalist class. The class struggle which is not a struggle with tools but for the possession of tools, a struggle for the right to direct industry, will be determined by the strength of the class organization.

Let us now look at the future system of production as carried on under Socialism. The struggle leading to the perfection of the tools does not cease. As before under capitalism, the inferior machine will be outdistanced and brushed aside by the one that is superior. As before, this process will lead to greater productivity of labor. But private property having been abolished, there will no longer be a man behind each machine calling it his own and sharing its fate. Machines will be common property, and the displacement of the less developed by the better developed machinery will be carried out upon careful consideration.

With the abolition of classes the entire civilized world will become one great productive community. Within this community mutual struggle among members will cease and will be carried on with the outside world. It will no longer be a struggle against our own kind, but a struggle for subsistence, a struggle against nature. But owing to development of technique and science, this can hardly be called a struggle. Nature is subject to man and with very little exertion from his side she supplies him with abundance. Here a new career opens for man: man's rising from the animal world and carrying on his struggle for existence by the use of tools, ceases, and a new chapter of human history begins.

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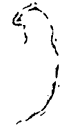

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